

REMARKS

As proposed during the telephone interview with the Examiner on June 28, 2004, Applicants in this response have amended claim 1 by incorporating the limitations that the monomer stream and the initiator stream are separately formed and fed into the reactor. Applicants believe that this amendment should satisfy the Examiner's concern that previously-presented claim 1 did not recite that these two streams are formed separately. See page 4, *the Office Action, April 26, 2004 (the "Office Action")*. As discussed during the interview, Applicants' intended meaning of forming a monomer stream and an initiator stream in original claim 1 was forming two separate streams. This amendment is fully supported by the original specification, e.g., Example 1.

The Examiner also expressed concern that the expression "initiator stream that contains a free radical initiator" in claim 1 does not preclude a monomer in the initiator streams. See page 4, *the Office Action*. To satisfy the Examiner, Applicants have amended claim 1 by changing the open-ended transitional language "contains" to close-ended transitional language "consisting essentially of." Therefore, the amended claim 1 makes clear not only that the monomer stream and the initiator stream are formed and fed separately but also that the monomers are excluded from the initiator stream and the initiators are excluded from the monomer stream.

Applicants believe that such amended claim 1 cannot be anticipated, either expressly or inherently, by McDaniel (U.S. 6,034,208) because McDaniel, although mentioning a "continuous" process, does not teach the claim elements. For instance, as the Examiner noted in the Office Action, Example 9 in col. 12 of McDaniel describes a semi-batch process in which a stream of acrylic acid (monomer), AIBN (initiator) and mercaptoethanoic acid (chain transfer agent) is formed. However, nowhere in McDaniel teaches continuously forming and

feeding into the reactor a monomer stream and an initiator stream as defined in claim 1.

Applicants have also amended claim 1 by incorporating the narrowed temperature (ranging about 40°C to about 60°C) of original claim 3. As discussed with the Examiner during the interview and in Applicants' previous response, Applicants believe original claim 3 is patentable in view of McDaniel. Although McDaniel has a generic disclosure of the polymerization temperature range (0°C to 150°C), this genus does not anticipate claim 3 which specifies a temperature range (from about 40°C to about 60°C) within which the resultant polymers have superior performance. Applicants' experimental results show that when the copolymerization is performed at a temperature within the claimed range, the resultant copolymer has very narrow molecular weight distribution and thus better performance. See Example 1 where the copolymerization temperature is 40°C and the copolymer has $M_w/M_n=1.36$. In contrast, McDaniel performed the copolymerization at 85°C (reference Examples 7 and 8) and 70°C (reference Example 9) and the resultant copolymers in reference Examples 7-9 have M_w/M_n 3.5, 3.0, and 6.4, respectively. These copolymers of broad molecular weight distributions have inferior performance as water-reducers in cement.

In the interview summary, the Examiner points out that in the rejection of claim 3, the Examiner relied on the comparative example (C2) of McDaniel. As discussed with the Examiner during the interview, the McDaniel's C2 teaches away from the invention. The C2 demonstrates that following its procedure a "gelled" product forms, which is useless for the use as water-reducer in cement. Further, Applicants want to draw the Examiner's attention to the fact that the C2, like the above-discussed Example 9 of McDaniel, teaches only forming one stream which includes polyether acrylate (monomer), acrylic acid (monomer), AIBN (initiator) and mercaptoacetic acid (chain transfer agent). Summarily, the C2 does not teach the formation of two separate streams as Applicants claim.

Due to the amendments of claim 1, Applicants have cancelled claims 2-5 and 7. As a result, only claims 1 and 9 remain for reconsideration after entering the amendments. Applicants believe that this response has fully addressed the Examiner's concerns and that the remaining claims are allowable in view of McDaniel and any other cited references. Accordingly, Applicants respectfully ask the Examiner to withdraw the rejection and to allow claims 1 and 9. Applicants invite the Examiner to telephone their attorney, Mr. Shao-Hua Guo, at (610) 359-6059, if a further discussion of the application might be helpful.

Respectfully submitted,
Bi Le-Khac et al.

By: Shao-Hua Guo

Shao-Hua Guo
Attorney for Applicants
Reg. No. 44,728
Lyondell Chemical Company
Phone: (610) 359-6059
07/13/2004